IN THE CLAIMS:

1. (previously presented) A descriptor, embodied within a computer-readable medium, said descriptor being configured to represent, from a video indexing viewpoint, motions of a camera or any kind of observer or observing device, said descriptor being configured for flexibility with respect to how many frames are to be retrieved from a database, and, in particular, to cover the case of one frame, configured to represent the motions within any one frame of a video sequence, and, to cover the case of more than one frame, configured to represent any series comprised of a plurality of frames of the video sequence, the motions represented in said descriptor comprising, for said any one frame and for said series, respectively, at least one of the following basic motion types: fixed, panning, tracking, tilting, booming, zooming, dollying and rolling, or any combination of two or more of these types, said descriptor being further configured such that each of said motions represented, except fixed, is oriented and subdivided, in the representation, into two components that stand for two different directions, magnitudes of the respective components each corresponding to a respective predefined size of displacement, the sizes being corresponding values of a dependent variable that defines a histogram for the descriptor.

2. (previously presented) The descriptor of claim 1, wherein each motion type, assumed to be independent, has its own speed described, in said descriptor, in an unified way by choosing a common unit to represent it.

3. (previously presented) The descriptor of claim 2, in which each motion type speed is represented by a pixel-displacement value working at the half-pixel accuracy.

4. (previously presented) The descriptor of claim 3, in which, in order to work with integer values, speeds are rounded to the closest half-pixel value and multiplied by 2.

5. (previously presented) The descriptor of Claim 1, wherein a description afforded by said descriptor is hierarchical, by means of a representation of the motion handled at any temporal granularity.

6. (previously presented) The descriptor of claim 4, wherein given a temporal window of the video sequence $[n_0, n_0 + N]$ (N is the total number of frames of the window) and the speeds of each motion type for each frame, the number of frames N_{motion_type} in which each motion type has a significant speed is computed and the temporal presence is represented by a percentage, defined as follows:

$$T_{type\ of\ motion} = N_{type\ of\ motion} / N$$

the temporal presence of all the possible motions being then represented by a said histogram in which said values, between 0 and 100, correspond to a percentage, said values being only 0 or 100, depending on the fact that the given movement is present or not in the frame, when the window is reduced to a single frame.

7. (previously presented) An image retrieval system comprising a camera for the acquisition of video sequences, a video indexing device, said database, a graphical user interface for carrying out a requested retrieval from said database, and a video monitor for displaying the retrieved information, an indexing operation within said video indexing device being based on categorization resulting from the use of said descriptor of claim 1.

8. (previously presented) The descriptor of claim 1, wherein the histogram has an independent variable with values that form pairs, each pair corresponding to a different one of said motion types.

9. (previously presented) The descriptor of claim 8, wherein the histogram is configured according to the equation:

$$T_{\text{type of motion}} = N_{\text{type of motion}} / N$$

wherein the subscript "type of motion" represents the independent variable, N represents the number of the frames that are within a window, and $N_{\text{type of motion}}$ represents the number of frames within the window that have the one of the motion types represented by said subscript.

10. (previously presented) A computer program product comprising a computer-readable medium having a computer program comprising a sequence of instructions for creating the descriptor of claim 1.

11. (previously presented) The product of claim 10, wherein the histogram has an independent variable with values that form pairs, each pair corresponding to a different one of said motion types.

12. (previously presented) The product of claim 11, wherein the histogram is configured according to the equation:

$$T_{\text{type of motion}} = N_{\text{type of motion}} / N$$

wherein the subscript "type of motion" represents the independent variable, N represents the number of the frames that are within a window, and $N_{\text{type of motion}}$ represents the number of frames within the window that have the one of the motion types represented by said subscript.

13. (previously presented) The system of claim 7, wherein said retrieval is based on said descriptor serving as a query into the database.

14. (previously presented) The descriptor of claim 1, wherein said descriptor, upon being utilized as a query into a database, includes a predetermined temporal window of the video data $[n_0, n_0 + N]$ (N is the total number of frames of the window).

15. (previously presented) The descriptor of claim 14, configured with flexibility as to a size of said window, so that, in said case of one frame, the window size is one, and, in said case of more than one frame, the window size is greater than one.

16. (previously presented) The database of claim 4, configured to query said N frames of the database in response to said descriptor.

17. (previously presented) Said database of claim 1, configured to be queried by the descriptor of claim 1.

18. (previously presented) A video indexing device, configured to carry out a data indexing method based on a categorization that affords querying of said database by said descriptor of claim 1, said database storing data resulting from said categorization.

19. (previously presented) The descriptor of claim 1, formatted to comprise a starting point of said video sequence, an ending point of said video sequence, a temporal presence of each of said motion types, and a respective speed magnitude for each of said motion types.

20. (previously presented) The descriptor of claim 19, further formatted to be associated with successive time periods.

21. (previously presented) A method of querying the database of claim 1, comprising:

entering the descriptor of claim 1; and

providing the entered descriptor to said database to allow the retrieving from said database.

22. (new) A descriptor, embodied within a computer-readable medium, said descriptor being configured to represent, from a video indexing viewpoint, motions of a camera or any kind of observer or observing device, said descriptor being configured for flexibility with respect to how many frames are to be retrieved from a database, and, in particular, to cover the case of one frame, configured to represent the motions within any one frame of a video sequence, and, to cover the case of more than one frame, configured to represent any series comprised of a plurality of frames of the video sequence, said descriptor being further configured such that ones of said motions said descriptor is configured to represent are each oriented and subdivided, in the representation, into two

components that stand for two different directions, magnitudes of the respective components each corresponding to a respective predefined size of displacement, the sizes being corresponding values of a dependent variable that defines a histogram for the descriptor.

23. (new) The descriptor of claim 22, wherein each motion type, assumed to be independent, has its own speed described, in said descriptor, in a unified way by choosing a common unit to represent it.

24. (new) An image retrieval system comprising a camera for the acquisition of video sequences, a video indexing device, said database, a graphical user interface for carrying out a requested retrieval from said database, and a video monitor for displaying the retrieved information, an indexing operation within said video indexing device being based on categorization resulting from the use of said descriptor of claim 22.

25. (new) The descriptor of claim 22, wherein the histogram has an independent variable with values that form pairs, each pair corresponding to a different one of said motion types.

26. (new) A computer program product comprising a computer-readable medium having a computer program comprising a sequence of instructions for creating the descriptor of claim 22.

27. (new) The descriptor of claim 22, wherein said descriptor, upon being utilized as a query into a database, includes a predetermined temporal window of the video data $[n_0, n_0 + N]$ (N is the total number of frames of the window).

28. (new) Said database of claim 22, configured to be queried by the descriptor of claim 22.

29. (new) A video indexing device, configured to carry out a data indexing method based on a categorization that affords querying of said database by said descriptor of claim 22, said database storing data resulting from said categorization.

30. (new) The descriptor of claim 22, formatted to comprise a starting point of said video sequence, an ending point of said video sequence, a temporal presence of each of said motion types, and a respective speed magnitude for each of said motion types.

31. (new) A method of querying the database of claim 22, comprising:

entering the descriptor of claim 22; and

providing the entered descriptor to said database to allow the retrieving from said database.